



Polyethylene

# Borstar® LE8707

Black Bimodal Linear Low Density Polyethylene Jacketing Compound for Energy and Communication Cables

## Description

**Borstar LE8707** is a black linear low density (LLD) jacketing compound, which is produced with the Borealis proprietary Borstar bimodal process technology. Borstar LE8707 contains 2.6% well-dispersed carbon black in order to ensure excellent weathering resistance.

Borstar technology allows the manufacturing of polymers outside the traditional MFR and density range making it possible to optimize processability, reduce shrinkage and yet provide excellent physical toughness and environmental stress crack resistance (ESCR).

## Applications

**Borstar LE8707** is designed for jacketing of energy and communication cables.

The abrasion resistance combined with low coefficient of friction makes it ideally suitable for the jacketing of energy and communication cables. Borstar LE8707 offers a balance of properties giving advantages in manufacturing, installation and lifetime performance of communication and energy cables.

## Specifications

**Borstar LE8707** meets the applicable requirements as below when processed using sound extrusion practice and testing procedure:

ASTM D 1248 Type I, Class C, Category 4, Grade E4, E5,  
J3, W2-4  
ISO 1872-PE, KCHL, 23-D012  
AEIC CS8

ICEA S-93-639  
ANSI/ICEA S-94-649  
ANSI/ICEA S-97-682  
UL 1072

The following cable material standards are met by Borstar LE8707:

EN 50290-2-24

DMP 5, 7-10, 12, 14, 15, 17

Cables manufactured with Borstar LE8707 using sound extrusion practice normally comply with the following cable product standards:

IEC 60708  
IEC 60794  
IEC 60502, Part 2, Type ST3, ST7  
IEC 60840, Type ST3  
IEC 60840, Type ST7  
HD 632 S2, ST3, ST7  
EN 50407

EN 187105  
HD 603 S1, DMP 5, 7, 8  
HD 620 S2, DMP 9, 10, 12, 14, 15, 17  
UL 1072 Oil resistance I & II  
AEIC CS8  
ANSI/ICEA S-97-682  
UL 1072

## Special Features

**Borstar LE8707** consists of specially selected components to offer:

Superior processability

Excellent environmental stress cracking resistance (ESCR)

Borstar is a registered trademark of the Borealis group.

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**Polyethylene**  
**Borstar LE8707**

Rather low heat deformation  
Low coefficient of friction  
Low water permeability

Good petroleum-jelly resistance  
Outstanding UV resistance  
Low shrinkage

**Physical Properties**

Property	Typical Value	Test Method
Data should not be used for specification work		
Density (Base Resin)	923 kg/m <sup>3</sup>	ISO 1183-1, Method A
Density (Compound)	936 kg/m <sup>3</sup>	ISO 1183-1, Method A
Melt Flow Rate (190 °C/2,16 kg)	0,85 g/10min	ISO 1133-1, Method A
Flexural Modulus	400 MPa	ISO 178
Tensile Strain at Break (50 mm/min)	800 %	ISO 527-2
Tensile Strength (50 mm/min)	30 MPa	ISO 527-2
Absorption coefficient, at 375 nm (abs/m)	400	ASTM D3349
Brittleness temperature	< -76 °C	ASTM D 746
Environmental Stress Crack Resistance (50 °C, Igepal 10 % F0)	> 5.000 h	IEC 60811-406
Hardness, Shore D (1 s)	55	ISO 868
Pressure Test at High Temperature (115 °C, 6 h)	< 15 %	IEC 60811-508

**Electrical Properties**

Property	Typical Value	Test Method
Data should not be used for specification work		
Dielectric constant (1 MHz)	2,5	IEC 60250
DC Volume Resistivity	10 PΩcm	IEC 60093
Dielectric Strength	> 20 kV/mm	IEC 60243
Dissipation Factor (1 MHz)	0,0004	IEC 60250

**Processing Techniques**

Borstar LE8707 provides excellent surface finish and allows a broad processing window. Standard PE-screw gives satisfactory results but also low compression screws can be used successfully.

**Extrusion**

If preheating and/or drying is used, the maximum temperature should be 90°C.

Preheating	90 °C	Maximum Temperature
Drying	90 °C	
Feed section	150 °C	
Metering section	170 °C	
Die head	190 °C	



# Polyethylene Borstar LE8707

## Packaging

Package:           Bulk  
                      Octabins  
                      Bags

## Storage

**Borstar LE8707** has a shelf life of 24 months from production date if stored in unopened original packages, under dry and clean conditions at temperatures between 10 - 30 °C (50 - 85 °F). Material shelf life is affected by the storage conditions and extreme conditions influence the general material quality and performance. It is also recommended to ensure proper stock rotation by First In – First Out principle. More information on storage is found in the Safety data sheet (SDS) / Product safety information sheet (PSIS) for this product.

## Safety

The product is not classified as dangerous and is intended for industrial use only. Check and follow local codes and regulations!

Please see our "Safety data sheet" / "Product safety information sheet" for details on various aspects of safety of the product. For more information, contact your Borealis representative.

## Disclaimer

**The product(s) mentioned herein are not intended to be used for medical, pharmaceutical or healthcare applications and we do not support their use for such applications.**

To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication; however we do not assume any liability whatsoever for the accuracy and completeness of such information.

**Borealis makes no warranties which extend beyond the description contained herein. Nothing herein shall constitute any warranty of merchantability or fitness for a particular purpose.**

**It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products.**

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